UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte LUC LEMMENS, SJAAK SCHEL, KOEN VERMOLEN, SIMON ANNE DE MOLINA, WALTER SPIRITUS and BART VANDEWAL

Appeal No. 2006-1447
Application No. 10/775,881
Technology Center 3600

ON BRIEF

Before OWENS, BAHR, and LEVY, Administrative Patent Judges.

LEVY, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1-6. Claims 7-17 stand allowed.

We AFFIRM.

BACKGROUND

The appellants' invention relates to an air pressure proportional damper for a shock absorber (specification, page 1). Claim 1 is representative of the invention, and is reproduced as follows:

1. An air pressure proportional damper comprising:

a container having a first chamber and a second chamber;

a piston rod slidingly disposed in the first chamber of the container;

a piston attached to the piston rod, the piston being in sliding engagement with walls of the first chamber;

a valve disposed between the first chamber and the second chamber, the valve regulating fluid flow between the first chamber and the second chamber through a fluid passage;

a membrane movable between a first position where the fluid passage is open and a second position where the fluid passage is closed, the membrane defining an aperture to allow a specified amount of fluid flow between the first chamber and the second chamber when the membrane is in the second position;

a pressure signal supplied from an air spring to the valve;

wherein the valve regulates fluid flow from the first chamber to the second chamber proportional to the pressure signal.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

de Molina (Molina)	5,725,239	Mar. 10, 1998

Vermolen et al. (Vermolen) 5,924,528 Jul. 20, 1999

Claims 1-3, 5 and 6 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Vermolen.

Claim 4 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Vermolen in view of Molina.

Rather than reiterate the conflicting viewpoints advanced by the examiner and the appellants regarding the above-noted rejections, we make reference to the answer (mailed October 13, 2005) for the examiner's complete reasoning in support of the rejections, and to the brief (filed July 29, 2005) and reply brief (filed December 12, 2005) for the appellants' arguments thereagainst.

Only those arguments actually made by appellants have been considered in this decision. Arguments which appellants could have made but chose not to make in the brief have not been considered. See 37 CFR § 41.37(c)(1)(vii)(eff. Sept. 13, 2004).

OPINION

In reaching our decision in this appeal, we have carefully considered the subject matter on appeal, the rejections advanced by the examiner, and the evidence of anticipation and obviousness relied upon by the examiner as support for the rejections. We

have, likewise, reviewed and taken into consideration, in reaching our decision, appellants' arguments set forth in the briefs along with the examiner's rationale in support of the rejections and arguments in rebuttal set forth in the examiner's answer.

Upon consideration of the record before us, we make the determinations which follow. We begin with the rejection of claims 1-3, 5 and 6 under 35 U.S.C. § 102(b) as being anticipated by Vermolen. We note at the outset that appellants argue the claims as a group. Accordingly, we select claim 1 as representative of the group. We note by way of background that it is well settled that if a prior art device inherently possesses the capability of functioning in the manner claimed, anticipation exists whether there was a recognition that it could be used to perform the claimed function. See, e.g., In re Schreiber, 128 F.3d 1473, 1477, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997).

Appellants assert (brief, page 7) that "the Examiner has failed to disclose where in Vermolen, et al. the membrane defines an aperture to allow a specified amount of fluid flow between the two chambers when the membrane is in its second

position where the fluid passage between the two chambers is closed." It is argued (brief, pages 7 and 8) that when shim disc 78 closes fluid passage or restriction 108, fluid flow is prohibited from flowing through restriction 108 because of the closing of restriction 108 by shim disc 78. Appellants note (id.) that as shown in figure 3, aperture 106 is aligned with aperture 98 and, thus, fluid can flow through aperture 106 into chamber 112 and even into chamber 110, but that there is nothing in Vermolen which defines aperture 106 as being open to anything but aperture 98 as illustrated in figure 3. As shown in figure 3, aperture 106 is clearly not in communication with annular chamber 102.

With respect to the examiner's assertion in the advisory action that chambers 40 and 42 can communicate through channels 92, 94 through channel 98, appellants argue that the examiner has failed to include the fact that this flow must occur when channel 98 is closed by shim disc 78. Appellants acknowledge (id.) that the area between disc 78 and seat 96 is defined as restriction 108, which is the equivalent of the fluid passage of the present invention. However, appellants argue (brief, pages 8 and 9) that when disc 78 closes restriction 108, fluid flow is prevented

between disc 78 and seat 96 since restriction 108 is closed, and (brief, page 9) that "[t]hus, the only way for fluid to flow from aperture 98 to annular chamber 102 would be if aperture 106 was in communication with both aperture 98 and annular chamber 102." Appellants add (id.) that "[s]pecifically, Vermolen, et al. fails to disclose, teach or suggest an aperture to allow a specified amount of fluid flow between the first chamber and the second chamber when the membrane closes the fluid passage."

The examiner responds (answer, page 5) that "to the extent appellant's device is capable of letting fluid flow through the passage or 'aperture' 130 when in the 'closed' or 'second' position, as discussed on page 12 second paragraph of their specification, so is the device of Vermolen et al as shown in figure 3." The examiner adds (answer, page 6) that:

> even with consideration given to appellant's argument that with the membrane 78 in the "closed position", or firmly seated against element 96, that fluid cannot pass through 108 the first chamber of Vermolen et al. can be interpreted as 36, the second chamber at 112 or 110, the "valve" can be interpreted as comprising 96,98,78,106,114, which further comprises the membrane 78, as broadly claimed. Fluid is therefore capable of flowing between the "first" and "second" chambers through the hole 106 defined by membrane 78.

Appellants (reply brief, page 3) repeat the argument that "aperture 108 does not allow fluid flow when membrane 78 closes the passage since aperture 108 is closed when the fluid passage is closed."

From our review of the record, we note at the outset that appellants take the position that Vermolen does not teach or suggest that the membrane defines an aperture to allow a specified amount of fluid flow between the first chamber and the second chamber when the membrane is in the second (or closed) position. Before turning to the Vermolen reference, we note that the term "closed" as used by appellants, refers to the membrane being moveable to a second (or closed) position that closes the fluid passage while allowing a specified amount of fluid flow between the first chamber and the second chamber. Thus, although the term "closed" is used, we consider the term "closed" as used by appellants to refer to a restriction of the fluid passage that permits a specified amount of fluid flow between the first chamber and the second chamber. In addition, we note that claim 1 does not recite that the aperture extends through the membrane (as shown at 130 in appellants' figure 4) but rather recites "the membrane defining an aperture."

Turning to Vermolen, we find that the reference (col. 1, lines 5-8) is directed to "an assembly for variably adjusting the damping characteristics of the shock absorber during the compression and rebound strokes of the shock absorber piston." As illustrated in figure 3, Vermolen discloses that restriction ring 80 engages upper valve body 76 and sandwiches shim disc 78 between valve body 76 and restriction ring 80 (col. 5, lines 11-13), and that shim disc defines a hole 106 at its inner side (col. 5, lines 16 and 17). Vermolen further discloses (col. 5, lines 20-23) that "[s]him disc 78 is located above annular projection 96 and with annular projection 96 defines a restriction 108 which restricts the flow of fluid between apertures 92 and 94." The size of restriction 108 is controlled by the size of hole 106, the thickness of shim disc 78 and the fluid pressure within chambers 110 and 112 (col. 5, lines 28-31). Vermolen explains (col. 5, line 60 through col. 6, line 9) that

> The increase in fluid pressure within chamber 112 causes movement of shim disc 78 towards annular projection 96 to reduce the size of restriction 108. This reduction in the size of restriction 108 reduces the flow between upper working chamber 42 and fluid reservoir 48 providing a relatively stiff shock absorber 10. The decrease in fluid pressure within chamber 112 causes movement

> of shim disc 78 away from annular projection 96 to increase the size of restriction 108. This increase in the size of restriction 108 increases the flow between upper working chamber 42 and fluid reservoir 48 providing a relatively soft shock absorber 10. Thus, the stiffness of shock absorber 10 can be controlled by the amount of fluid pressure supplied to plastic air tube 120, which controls the amount of fluid pressure within control chamber 124, which controls the amount of fluid pressure within chambers 110 and 112 which control the movement of shim disc 78 and the size of restriction 108.

In operation, when wheel 16 or 22 rolls over an obstruction, fluid in tube 62 flows into aperture 92, through aperture 98, past restriction 108, through chamber 102 and out aperture 94 into fluid reservoir 48 (col. 6, lines 45-47). During rebound of shock absorber 10, fluid in tube 62 flows into aperture 92, through aperture 98, past restriction 108, through chamber 102 and out aperture 94 into fluid reservoir 48 (col. 6, line 54 and 58-61). Vermolen further discloses (col. 9, line 62 through col. 7, line 5) that:

> the rate of fluid flow from upper working chamber 42 to fluid reservoir 48 varies in accordance with the amount of fluid pressure being supplied to plastic air tube 120. This fluid pressure varies the rate at which fluid can flow from upper working chamber 42 into fluid reservoir 48 through valve assembly 60 due to the size of restriction 108. By

> increasing the fluid pressure, the shock absorber damping characteristic is increased, making the shock absorber stiffer. Similarly, by decreasing the fluid pressure, the damping characteristic of shock absorber 10 is decreased, making the shock absorber softer. This increase and decrease of stiffness for shock absorber 10 occurs in both the compression and extension of shock absorber 10.

In addition, it is further disclosed (col. 7, lines 8-26) that:

> Thus, when the vehicle load increases, the control pressure applied to plastic air tube 120 correspondingly increases. This increased control pressure displaces membrane 82 in the direction of shim disc 78. Displacement of membrane 82 increases the fluid pressure within chambers 110 and 112 which correspondingly increases the fluid pressure to move shim disc 78 toward annular projection 96 to further restrict the flow between upper working chamber 42 (via fluid tube 62, aperture 92, aperture 98, restriction 108, chamber 102 and aperture 94) to working chamber 48. In a like manner, when the vehicle load decreases, the control pressure applied to plastic air tube 120 decreases correspondingly. The decrease in control pressure displaces membrane 82 away from shim disc 78, thereby decreasing the fluid pressure within chambers 110 and 112. This results in an decreased fluid pressure being applied to shim disc 78 and shim disc 78 will move away from annular projection 96 to increase the size of restriction 108 to increase fluid flow between upper working chamber 42 and fluid reservoir 48.

From our review of Vermolen, we find no description of shim disc 78 moving to the left to the extent that fluid flow between apertures 92 and 94 is cut off. Not withstanding appellants' arguments to the contrary, the reference describes increasing and decreasing the size of the restriction 108, but does not describe fluid passage restriction 108 to be closed. Accordingly, we are not persuaded by appellants' assertion (brief, page 8) that Vermolen "does not disclose, teach or even suggest this bleed flow of hydraulic fluid." In addition, as we noted, supra, claim 1 does not recite that the aperture extends through the membrane.

From the disclosure of Vermolen (col. 5, lines 21-24) that shim disc 78 and annular projection 96 "defines a restriction 108" we find that shim disc 78 (membrane) defines the aperture (restriction 108) as recited in claim 1. We are cognizant of the differences between appellants' disclosed invention and the earlier patent to Vermolen. However, these differences, such as the aperture extending through the membrane, are not found in claim 1 as broadly drafted.

We are not persuaded by appellants' assertion (brief, page 7) that "the Examiner has failed to disclose where in Vermolen, et al. the membrane defines an aperture to allow a specified amount of fluid flow between the two chambers when the membrane

is in its second position where the fluid passage between the two chambers is closed." In Vermolen, changes in the size of the restriction, due to the air pressure supplied by air tube 120, causes movement of shim disc 78 to the left or right to increase or decrease the size of restriction 108. However, whether the shim disc is moved to the left or right, fluid flow continues between 92 and 94 irrespective of the size of the restriction. Accordingly, we agree with the examiner (answer, page 6) that:

> even with consideration given to appellant's argument that with the membrane 78 in the "closed position," or firmly seated against element 96, that fluid cannot pass through 108 the first chamber of Vermolen et al. can be interpreted as 36, the second chamber at 112 or 110, the "valve" can be interpreted as comprising 96,98,78,106,114, which further comprises the membrane 78, as broadly claimed. Fluid is therefore capable of flowing between the "first" and "second" chambers through the hole 106 defined by membrane 78," since appellants membrane also allows some fluid flow even when it is closed.

We agree with appellants'(brief, page 8) that in figure 3 of Vermolen, aperture 106 is aligned with aperture 98, allowing fluid to flow into chambers 112 and 110, but that there is nothing in Vermolen which defines aperture 106 as being open to anything but aperture 98. We add that, as shown in figure 3 of Vermolen, fluid can flow through aperture 106 into chambers 112 and 110. However, the fluid would not be flowing through

aperture 98 to chamber 102 and aperture 94 through aperture 106 because it is flowing through aperture 106 into chamber 112 and not into chamber 102.

We additionally agree with appellants (brief, page 8) that "[t]he area between disc 78 and seat 96 is defined as restriction 108 which is the equivalent of the fluid passage in the present invention." However, we do not agree with appellants' subsequent statement that "when disc 78 closes restriction 108 fluid flow is prevented between disc 78 and seat 96 since restriction 108 is closed" because we find no convincing evidence in Vermolen, and no passage of Vermolen has been pointed to by appellants, that would describe restriction 108 as being closed.

We are not persuaded by appellants' assertion (reply brief, page 3) that "[i]f we accept the Examiner's position that membrane 78 defines aperture 108, then aperture 108 does not allow fluid flow when membrane 78 closes the passage since aperture 108 is closed when the fluid passage is closed" because, as we found, supra, membrane (shim disc) 78 does not close aperture (restriction) 108 when the fluid passage is closed, but rather, air from tube 120 causes shim disc 78 to move resulting

in increase or decrease in the size of the restriction 108 (col. 7, lines 8-26).

From all of the above, we hold that the disclosure of Vermolen is sufficient to establish a prima facie case of anticipation of claim 1, and we are not convinced of any error on the part of the examiner in rejecting claim 1 under 35 U.S.C. § 102(b). The rejection of claim 1 under 35 U.S.C. § 102(b) as being anticipated by Vermolen is sustained. As dependent claims 2, 3 5 and 6 have not been separately argued by appellants, the rejection of claims 2, 3, 5 and 6 under 35 U.S.C. § 102(b) is sustained.

We turn next to the rejection of claim 4 under 35 U.S.C. § 103(a) as being unpatentable over Vermolen in view of Molina. The examiner's rejection can be found on pages 4 and 5 of the answer. In the rejection, the examiner relies upon Molina for a teaching of having plural discs as the membrane. Appellants provide no arguments regarding this rejection.

From our review of the record, and in particular, from Molina's disclosure of flexible discs 136 (figure 4), we agree with the examiner that the combined teachings of Vermolen and Molina would have suggested to an artisan the invention of claim

4, and are not convinced of any error on the part of the examiner in rejecting claim 4 under 35 U.S.C. § 103(a). The rejection of claim 4 under 35 U.S.C. § 103(a) is sustained.

CONCLUSION

To summarize, the decision of the examiner to reject claims 1-3, 5 and 6 under 35 U.S.C. § 102(b) is affirmed. The examiner's decision to reject claim 4 under 35 U.S.C. § 103(a) is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a)(1)(iv).

AFFIRMED

TERRY J. OWENS)
Administrative Patent Judge)
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JENNIFER D. BAHR) BOARD OF PATENT
Administrative Patent Judge) APPEALS
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